ADEQ Arizona Department of Environmental Quality

DRAFT FACT SHEET

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a mine with a total of three outfalls and one internal monitoring point, with discharge occurrence and discharge volumes dependent on storm flows. This facility is considered to be a major facility under the NPDES program. The discharge limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (A.A.C.) R18-11-101 et. seq. This permit is proposed to be issued for a period of 5 years.

I. PERMITTEE INFORMATION	
Permittee's Name:	ASARCO LLC
Permittee's Mailing Address:	PO Box 111 Sahuarita, AZ 85289
Facility Name:	ASARCO LLC – Mission Complex
Facility Address or Location:	4201 West Pima Mine Road Sahuarita, AZ 85629
County:	Pima
Contact Person(s): Phone/e-mail address	Jamie Ekholm, Environmental Manager Phone: 520-393-4671 Email: jekholm@asarco.com
AZPDES Permit Number:	AZ0024597
Inventory Number:	100508
LTF Number:	74867

II. STATUS OF PERMIT(s)	
AZPDES permit applied for:	Renewal
Date application received:	December 26, 2018
Date application was determined administratively complete:	January 15, 2019
Previous permit number (if different):	N/A
Previous permit expiration date:	July 1, 2019

208 Consistency:

In accordance with A.A.C. R18-9-A903(6), a permit cannot be issued for any discharge inconsistent with a plan or plan amendment approved under section 208(b) of the Clean Water Act.

208 Plan consistency is not required for industrial facilities.

ASARCO LLC has the following permits issued by ADEQ applicable to the ASARCO Mission Complex:

Type of Permit		
Aquifer Protection Permit (APP)	P100508 P512406	Regulates discharges to the local aquifer

II. GENERAL FACILITY INFORMATION	
Type of Facility:	Industrial facility; Commercial Open Pit Copper Mine
Facility Location Description:	The Mission Complex is located near Sahuarita, Arizona (18 miles south of Tucson) and is a commercial open pit copper/molybdenum mine. The mine site covers an area of approximately 19,000 acres (29.7 square miles) and includes an open pit (measuring approximately 2.5 miles long by 1.5 miles across), associated crushing, grinding and flotation facilities, tailings facilities, waste rock dumps, and warehouse, maintenance and administrative areas. The area of the Mission Complex north of Pima Mine Road is located on Tribal land of the San Xavier District of the Tohono O'Odham Nation, and the area south of the Pima Mine Road is primarily owned by Asarco. ADEQ has no authority on tribal land and EPA has issued a NPDES permit covering Asarco's activities on tribal land. This permit covers Asarco's activities on non-tribal land.
Facility Processes:	Ore is crushed via the primary gyratory crusher, rod mill and ball mill. The crushed ore is pumped as slurry to froth flotation cells, where chalcopyrite is separated from non-copper bearing minerals. Lime, xanthate (a biodegradable additive that serves as a collecting agent), pine oil (a frothing agent), and methyl isobutyl carbonyl may be added to the mixture to facilitate separation of the copper mineral ore. In the flotation stage, the chalcopyrite attaches to the air bubbles and is skimmed off. The first stage, "roughing" removes approximately 88% of chalcopyrite. The skimmed materials from the roughing stages are re-ground and sent to secondary froth flotation cells (two stages). Tailings are collected from the roughing and secondary flotation cells and gravity-fed to the tailings ponds. None of the tailings facilities on non-tribal land have been permanently reclaimed. For final processing, the copper concentrate (containing approximately 27% copper) is sent off site for smelting. From 1973 to 1978, a leaching plant was operated at the facility to acid leach copper from the oxide ore. However, the very high carbonate content of the orebody, and consequently the acid requirements for leaching, made copper recovery from this orebody uneconomic, and acid leaching ceased. A typical copper porphyry deposit such as that found at the Mission Complex can contain other minerals including silver, molybdenum, lead, zinc and manganese, and other elements such as traces of arsenic and tungsten. The Mission Complex periodically operates a molybdenum recovery circuit, based on market conditions.
Nature of facility discharge:	The Mission Complex does not discharge process water from its froth flotation process but recycles the solution back into the milling and flotation circuits. The solids from the froth flotation process are gravity-fed to large tailing impoundments by slurry, where the tails settle out. The decanted water is recycled and pumped back to the concentrator for re-use. Stormwater run-off at both the South and North Mills is contained in impoundments designed to contain the 100-year 24-hour storm event.

The South Mill drainage is contained in sedimentation basin RB9 and any overflow would be directed to a series of impoundments with containment designed to hold the 100-year 24-hour storm event. RB9 is unlined. Discharge from this area is prohibited under this permit.

The North Mill drainage is contained in sedimentation basins RB27 and the Mission 1 basin. The containment pond RB27 is not lined. These impoundments are designed to contain the 100-year 24-hour storm event and discharge from this area is prohibited under this permit.

Potential pollutants at the Mission Complex are found in the following: tailings reclaim water, tailings, solutions added during the milling process, waste rock and stormwater contaminated by contact with tailings and waste rock.

Outfall 003G – Outfall 003G receives run-off from the side slopes of two tailings dams, the associated slurry pipeline and reclaim system, and an adjacent parcel of open range land containing an access road and tailings slurry line. This outfall monitors any potential discharge from the Retention Basin RB M-T67-19 and other upgradient retention basins. These basins collect any potential run-off from the side slopes of the bottom berm of tailing storage facility's (TSFs) 6 & 7. It also collects any stormwater from the access roads along the north side of these two facilities. No discharges occurred from Outfall 003G during the current permit term.

Outfall 004I - Outfall 004I drains a retention basin that receives stormwater run-off from the side slopes of a tailings dam and the associated slurry pipeline. This outfall monitors any discharge from Retention Basin RB M-TB-21. This retention basin captures any potential run-off from the bottom slope around TSF 8. Based on the application and a review of the DMRs provided over the past permit term, no discharges occurred from outfall 004I during the current permit term. Therefore, no data are available to determine the quality of potential discharges from Outfall 004I.

Internal Monitoring Point 005K – 005K represents run-on stormwater from a large off-site area, as well as possibly reflecting comingled stormwater from a series of natural catchment depressions and constructed retention basins that receive stormwater run-off from several waste rock dumps and an undisturbed area of open land. Outfall 005K is an internal monitoring point (IMP) because it may represent commingled run-on/run-off stormwater that is directed downstream to Outfall 007H.

Outfall 007H - Downstream Monitoring Point (DMP) 007H is located in the stormwater run-on channel south of the access roadway and was included to understand any discharges between monitoring point 005K

	and this outfall. This outfall location is in an ephemeral wash that flows west to east along the southern boundary of the ASARCO property. This channel is the main flow channel for most of the watershed in the immediate area. It collects flows from at least, but not limited to, 6 other drainages that have headwaters in the Sierrita Mountains west of the property. ASARCO will be undertaking an additional special study to better understand this discharge contribution to the shared watershed drainage. With additional data collection over the permit term ASARCO anticipates this would allow them to remove outfalls 005K and 007H in the future. For additional special study details, please see special conditions section.
Discharge Flow:	**Outfall 003G** - No Discharge **Outfall 004I** - No Discharge **Internal Monitoring Point 005K** - Discharged due to one storm even 6/30/15, storm duration was 4 hours with a total precipitation of 3" and a flow rate of 64.63 MGD. **Outfall 007H** – Discharge History 07/28/2014 with a duration of 1 hour, 1.5" of precipitation, and a flow rate of 1.44 MGD. 3/23/2015 a storm event lasting 2 hours, with .14" of precipitation, and .452 MGD flow rate. 9/21/15 a storm event lasting 3 hours, with 1.7" of precipitation, and a 6.46 MGD flow rate. 10/23/2018 Approximately 3 hour storm event with a total max precipitation of <3.0", with a flow rate of 3.19 MGD.
Average flow per discharge:	Based on the 4 storm events to outfall 007; the average flow in the wash in which Outfall 007 is located is 2.88 MGD.
Continuous or intermittent discharge:	Intermittent
Discharge pattern summary:	Discharges only occur where containment structures overflow during an extreme and/or compounding storm events. During the last permit term 4 discharges have occurred at Outfall 007. These are consistent with the 24-hour, 100-year storm event.

III. RECEIVING WATER	
The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by designated use depending on the level of protection required to maintain that use.	
Receiving Water :	Unnamed ephemeral tributaries to the Santa Cruz River (from Tubac Bridge to the Roger Road WWTP outfall)
River Basin:	Santa Cruz River Basin
Outfall Location(s):	Outfall 003G: Township 17S, Range 13E, Section 10 Latitude 31° 58' 30" N, Longitude 110° 59' 88" W Outfall 004I: Township 17S, Range 13E, Section 15 Latitude 31° 57' 40" N, Longitude 110° 59' 77" W Internal Monitoring Point 005K: Township 17S, Range 13E, Section 7 Latitude 31° 57’ 50” N, Longitude 111° 3’ 73” W Outfall 007H: Township 17 S, Range 13 E, Section 10 Latitude 31˚ 57’ 55” N, Longitude 110˚ 59’ 94” W
The outfall discharges to, or the discharge may reach, a surface water listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1.	
Designated uses for the receiving water listed above:	ASARCO Mission (Outfalls 003G, 004I, & 007H) have the following designated uses: Aquatic and Wildlife ephemeral (A&We) Partial Body Contact (PBC)
Is the receiving water on the 303(d) list?	No, and there are no TMDL issues associated.
Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108, and the applicable numeric water quality standards are listed in A.A.C. R18-11-109 and in Appendix A thereof. There are two standards for the Aquatic and Wildlife uses, acute and chronic. In developing AZPDES permits, the standards for all applicable designated uses are compared and limits that will protect for all applicable designated uses are developed based on the standards.	

IV. DESCRIPTION OF DISCHARGE

Because the facility is in operation and discharges have occurred, discharge monitoring data are available. The following is the measured effluent quality reported in the application at Outfall 007H. 005K is an internal monitoring point, so no data was used from this outfall. No data was available for Outfalls 003G and 004I, as there were no discharges from these outfalls during the existing permit term.

Parameters	Units	Average Discharge Concentration	Maximum Daily Discharge Concentration
Flow	MGD	2.88 (estimated wash flow)	6.46 (estimated wash flow)
Hardness	mg/L	2162	3610
pH	S.U.	7.85	8.2
Arsenic	µg/L	82.95	66
Cadmium	µg/L	8.77	15
Chromium, Total	µg/L	132.25	207
Chromium VI	µg/L	5.75	7
Copper	µg/L	3155	4500
Lead	µg/L	648	958
Mercury	µg/L	0.575	1.3
Selenium	µg/L	14.8	20
Zinc	µg/L	2032.5	3000

V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT	
Date of most recent inspection:	10/18/2016; no potential violations were noted as a result of this inspection.
DMR files reviewed:	07/2014 through 04/2019
Lab reports reviewed:	07/2014 through 04/2019
DMR Exceedances:	Internal Outfall 005: Elevated concentrations of lead and copper occurred, however this is an internal monitoring point and not a point of compliance point. All discharges from Outfall 005 lead to Outfall 007. Outfall 007: Chromium, Copper, and Lead (October 2018). No other concentrations above applicable WQS were noted.
NOVs issued:	None
NOVs closed:	N/A
Compliance orders:	None

V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT	
Special Conditions: 2014-2019 Permit Term	Pursuant to Compliance Order issued by EPA No. CWA 402-9-02-31 issued June 20, 2002 and completed June 9, 2009, the permittee was asked to comply with the Order and the existing AZPDES permit issued July 2, 2014. The 2014 permit established a schedule to implement the construction and maintenance activities necessary to provide the stormwater containment and control mandated by the Order. Much of the work as described in the compliance schedule had been completed prior to the AZPDES permit becoming effective, however final completion of the comprehensive stormwater management required a federal Section 404 permit prior to construction. The required Section 404 permit was public noticed by COE on the week of January 13, 2014 and issued on May 29th, 2015 upon consultation with U.S. Fish and Wildlife Service under the Endangered Species Act and NEPA. In addition, ASARCO proposed to install temporary stormwater controls to improve run-on and run-off segregation coming onto the property. The AZPDES compliance schedule was completed by the permittee within the necessary 12 months of the effective date of the previous permit: July 2, 2015.

VI. PROPOSED PERMIT CHANGES

The following table lists the major changes from the previous permit in this draft permit.

Parameter	Existing Permit	Proposed permit	Reason for change
Reporting Location	Mail in hard copies of DMRs and other attachments	DMRs and other reports to be submitted electronically through myDEQ portal	Language added to support the NPDES electronic DMR reporting rule that became effective on December 21, 2015.
Compliance Schedule	Compliance schedule for construction of additional stormwater controls	Compliance schedule removed	ASARCO completed the stormwater control project in 2015.
Special Conditions	N/A	ASARCO will complete a special study to determine the source of the pollutants present in Outfall 007	More data is needed to understand the nature of the discharges from these outfalls.
Outfall and Internal Monitoring Point Coordinates	003G 31˚ 58’ 18” N, 111˚ 59’ 53” 004I 31˚ 57’ 24” N, 110˚ 59’ 46” W 007H 31˚ 57’ 33” N, 110˚ 59’ 57” W 005K 31˚ 57' 30" N, 111˚ 3' 45" W	003G 31˚ 58’ 30” N, 110˚ 59’ 88” W 004I 31˚ 57’ 40” N, 110˚ 59’ 77” W 007H 31˚ 57’ 55” N, 110˚ 59’ 94” W 005K 31˚ 57’ 50” N, 111˚ 3’ 73” W	More accurate information regarding Outfall and Internal Monitoring Point locations was provided.
Prohibition to Discharge Outfall 007	Limited to 10-year, 24-hour storm event	No prohibition	Discharge Prohibition is not applicable to Outfall 007 due to no applicable TBEL’s.

Anti-backsliding considerations – "Anti-backsliding" refers to statutory (Section 402(o) of the Clean Water Act) and regulatory (40 CFR 122.44(l)) requirements that prohibit the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes do identify exceptions to these circumstances where backsliding is acceptable. This permit has been reviewed and drafted with consideration of anti-backsliding concerns.

The previous AZPDES permit for ASARCO Mission Complex, Outfall 007H contained a condition that a discharge was not allowed unless it was in response to a storm event greater than a 10-year, 24-hour rain event. The rationale behind the condition was based on the TBEL requirements associated with the ore mining and dressing point source category listed in 40 CFR 440, subpart J and L, that lists details the prohibition to discharge process wastewater unless the facility qualifies for the stormwater exemption.

As mentioned previously, ASARCO Mission Complex has completed work at the site related to stormwater contributions to Outfall 007H. Outfall 007H is located in an ephemeral wash that flows west to east along the southern boundary of the ASARCO property. This channel is the main flow channel for most of the watershed in the immediate area. The only contributions to Outfall 007H would be stormwater and thus the TBELs are not applicable and therefore the 10-year, 24 hour discharge prohibition previously applied to Outfall 007H can be removed.

ADEQ concludes that this new information justifies the removal of the 10-year, 24-hour storm event limitation for Outfall 007H. The 10-year, 24-hour storm event limitation is not based on an Arizona Water Quality Standard (WQS). The backsliding of the 10-year, 24-hour storm event discharge limitation on Outfalls 007H is allowed pursuant to the exceptions listed in 40 CFR §122.44(l)(2)(i)(B)(1) that states a less stringent limit can be applied if information is available which was not available at the time of permit issuance. Any discharge from Outfall 007H will be required to meet applicable water quality based effluent limitations.

VII. DETERMINATION OF EFFLUENT LIMITATIONS and ASSESSMENT LEVELS

When determining what parameters need monitoring and/or limits included in the draft permit, both technology-based and water quality-based criteria were compared and the more stringent criteria applied.

Technology-based Limitations: As outlined in 40 CFR Part 440:
Any mine drainage discharged from the Mission Complex is subject to the discharge limitations at 40 CFR Part 440 Ore Mining and Dressing Point Source Category. Subpart J, the Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory, applies to mines that produce copper, lead, zinc, gold, silver or molybdenum ores, singly or in combination, from open-pit, or underground operations.

40 CFR 440.103(a) establishes effluent limitations applicable to mine drainage. The following limitations represent the degree of discharge reduction attainable by the application of the best available technology economically achievable (BAT).

Parameter	30-day Average	Daily Maximum
Cu	0.15 mg/l	0.30 mg/l
Zn	0.75 mg/L	1.5 mg/L
Pb	0.3 mg/L	0.6 mg/L
Hg	0.001 mg/L	0.002 mg/L
Cd	0.05 mg/L	0.10 mg/L

40 CFR 440.102(a) establishes the following limitations that represents the degree of discharge reduction attainable for mine drainage by the application of the best practicable control technology currently available (BPT).

Parameter	30-day Average	Daily Maximum
Total Suspended Solids	20 mg/l	30 mg/l
pH	within the range of 6.0 to 9.0	

Any discharge of mine drainage subject to Part 440 Subpart J through Outfalls 003G or 004I is expected to qualify for the *Storm exemption for facilities permitted to discharge* as provided in 40 CFR Part 440.131 (b). This storm exemption allows a source with an allowable discharge subject to 40 CFR Part 440 to have an overflow as a result of a storm event that does not meet the technology-based limitations established in 40 CFR Part 440 if that facility (1) is designed, constructed and maintained to contain the maximum volume of wastewater which would be generated by the 100-year, 24-hour storm event and (2) has taken all reasonable steps to maintain treatment and minimize overflow and (3) provides notification of such discharges.

For Outfalls 003G and 004I, Parts I.A and III.B of the permit require ASARCO to control storm water runoff with the potential to include mine drainage within containment designed to contain the 24-hour, 100-year storm event. Because any discharges are expected to qualify for the stormwater exemption for Outfalls 003G and 004I, the technology-based limitations have not been included in the discharge limitations specified in Part I.A., Table 1.a. However, monitoring and reporting of all parameters is required pursuant to Tables 2.a and 2.b. The requirements for containment, maintenance, and sampling of runoff are detailed in Part III of the permit requiring that ASARCO establish and maintain Best Management Practices, review and update the Stormwater Pollution Prevention Plan (SWPPP) as necessary, and submit any revisions of the SWPPP to the permitting authority.

Technology-based limitations are not included for Outfall 007H because mine drainage is no longer expected to be (or authorized to be) discharged through this outfall, and the technology-based limitations of Part 440, Subpart J do not apply to stormwater discharges.

Numeric Water Quality Standards: As outlined in A.A.C. R18-11-109 and Appendix A:
Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), discharge limits must be included in the permit for parameters with "reasonable potential" (RP), that is, those known to be or expected to be present in the effluent at a level that could potentially cause any applicable numeric water quality standard to be exceeded. RP refers to the possibility, based on the statistical calculations using the data submitted, or consideration of other factors to determine whether the discharge may exceed the Water Quality Standards. The procedures used to determine RP are outlined in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* (EPA/505/2-90-001). In most cases, the highest reported value for a parameter is multiplied by a factor (determined from the variability of the data and number of samples) to determine a "highest estimated value". This value is then compared to the lowest applicable Water Quality Standard for the receiving water. If the value is greater than the standard, RP exists and a water quality-based effluent limitation (WQBEL) is required in the permit for that parameter. RP may also be determined from BPJ based on knowledge of the treatment facilities and other factors. The basis for the RP determination for each parameter with a WQBEL is shown in the table below.

The proposed permit limits were established using a methodology developed by EPA. Long Term Averages (LTA) were calculated for each designated use and the lowest LTA was used to calculate the average monthly limit (AML) and maximum daily limit (MDL) necessary to protect all uses. This methodology takes into account criteria, effluent variability, and the number of observations taken to determine compliance with the limit and is described in Chapter 5 of the TSD. Limits based on A&W criteria were developed using the "two-value steady state wasteload allocation" described on page 99 of the TSD. When the limit is based on human health criteria, the monthly average was set at the level of the applicable standard and a daily maximum limit was determined as specified in Section 5.4.4 of the TSD.

Mixing Zone

The limits in this permit were determined without the use of a mixing zone. Arizona state water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies for and is approved for a mixing zone. Since a mixing zone was not applied for or granted, all water quality criteria are applied at end-of-pipe.

Assessment Levels (ALs)

ALs are listed in Part I.B of the permit. An AL differs from a discharge limit in that an exceedance of an AL is not a permit violation. Instead, ALs serve as triggers, alerting the permitting authority when there is cause for re-evaluation of RP for exceeding a water quality standard, which may result in new permit limitations. The AL numeric values also serve to advise the permittee of the analytical sensitivity needed for meaningful data collection. Trace substance monitoring is required when there is uncertain RP (based on non-detect values or limited datasets) or a need to collect additional data or monitor treatment efficacy on some minimal basis. A reopener clause is included in the draft permit should future monitoring data indicate water quality standards are being exceeded.

The requirement to monitor for these parameters is included in the draft permit according to A.A.C. R18-11-104(C) and Appendix A. ALs listed for each parameter were calculated in the same manner that a limit would have been calculated (see Numeric Water Quality Standards Section above).

Hardness

The permittee is required to sample hardness as CaCO3 at the same time the trace metals are sampled because the water quality standards for some metals are calculated using the water hardness values. The hardness value of 400 mg/L (the maximum hardness value allowed) was used to calculate the applicable water quality standards and any assessment levels or limits for the hardness dependent metals (cadmium, chromium III, copper, lead, nickel, silver, and zinc).

Whole Effluent Toxicity (WET)

WET testing is not required for stormwater discharges. Although the narrative standard prohibiting the discharge of toxic pollutants applies to all discharges, the test species are not appropriate for these receiving waters and no alternative tests are readily available. Therefore, WET testing is not required in this permit

Permit Limitations and Monitoring Requirements

The table that follows summarizes the parameters that are limited in the permit and the rationale for that decision. Also included are the parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for those decisions. The corresponding monitoring requirements are shown for each parameter. In general, the regulatory basis for monitoring requirements is per 40 CFR §122.44(i) *Monitoring requirements,* and 40 CFR §122.48(b), *Required monitoring*; all of which have been adopted by reference in A.A.C. R18-9-A905, *AZPDES Program Standards*.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Outfall 003G & Outfall 004I						
Flow	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be estimated by acceptable hydraulic procedures.
Hardness	No applicable standard. Hardness is used to determine standards for specific metal parameters.	- - -	No Data	- - -	RP Indeterminate (Limited Data)	A&We standards for cadmium, chromium III, copper, and zinc used for RP determinations were based on the average effluent hardness value of 400 mg/L. Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
pH	Minimum: 6.5 Maximum: 9.0 PBC A.A.C. R18-11-109(B)	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring required 1x/discharge event and a WQBEL remains.
Arsenic	280 µg/L/ PBC	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Cadmium (2)	290 µg/L/ A&We acute	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Chromium (Total)	100 µg/L/ PBC	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Chromium VI	34 µg/L/ A&We acute	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Copper (2)	86 µg/L/ A&We acute	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and a limit remains.
Lead (2)	15 µg/L / PBC	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and a limit remains.
Mercury	5.0 µg/L/ A&We acute	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Selenium	33 µg/L/ A&We acute	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Zinc (2)	3600 µg/L/ A&We acute	- - -	No Data	- - -	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and a limit remains.

Footnotes:
(1) The monitoring frequencies are as specified in the permit.
(2) Hardness-dependent metal - the standard is for this parameter is based on the average hardness value of the effluent or receiving water as indicated above.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Outfall 007H						
Flow	- - -	- - -	- - -	- - -	- - -	Discharge flow is to be estimated by acceptable hydraulic procedures.
Hardness	No applicable standard. Hardness is used to determine standards for specific metal parameters.	3610 mg/L	4	N/A	Required whenever monitoring for hardness dependent metals.	A&We standards for cadmium, chromium III, copper, and zinc used for RP determinations were based on the maximum effluent hardness value of 400 mg/L. Monitoring for hardness is required whenever monitoring for hardness dependent metals is required.
pH	Minimum: 6.5 Maximum: 9.0 PBC A.A.C. R18-11-109(B)	8.2	3	N/A	WQBEL is always applicable	Monitoring required 1x/discharge event and a WQBEL remains.
Arsenic	280 µg/L/ PBC	79 µg/L	10	237 µg/L (4)	No RP	Monitoring is required 1x/discharge and an assessment level remains.
Cadmium (2)	290 µg/L/ A&We acute	15 µg/L	4	71 µg/L	No RP	Monitoring is required 1x/discharge as an assessment level.
Chromium (Total)	Previous permit applied 100 µg/L – PBC.	207 µg/L	4	973 µg/L	RP (BPJ)	ADEQ removed the PBC total chromium standard in 2008 triennial review, but EPA never approved the removal for Clean Water Act purposes. ADEQ is in the process of re-adopting the 100 ug/l PBC standard for total chromium in the current TR update to the state's surface water quality standards (SWQS) rule. Because the previous permit applied a limit based on the 100 ug/l PBC criterion, the total chromium limit in this permit will remain to be consistent with the updated SWQS. Monitoring is required 1x/discharge and a limit remains.
Chromium VI	34 µg/L/ A&We acute	<14 µg/L	4	33 µg/L	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Copper (2)	86 µg/L/ A&We acute	4500 µg/L	4	21150 µg/L	RP Exists	Monitoring is required 1x/discharge and a limit remains.
Lead (2)	15 µg/L / PBC	958 µg/L	4	4503 µg/L	RP Exists	Monitoring is required 1x/discharge and a limit remains.
Mercury	5.0 µg/L/ A&We acute	1.3 µg/L	4	6.0 µg/L	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Selenium	33 µg/L/ A&We acute	<40 µg/L	4	N/A	RP Indeterminate (Limited Data)	Monitoring is required 1x/discharge and an assessment level remains.
Zinc (2)	3600 µg/L/ A&We acute	3000 µg/L	4	14100 µg/L	RP Exists	Monitoring is required 1x/discharge and a limit remains.

Footnotes:
(1) The monitoring frequencies are as specified in the permit.
(2) Hardness-dependent metal - the standard is for this parameter is based on the average hardness value of the effluent or receiving water as indicated above.
(3) Monitoring with ALs or Action Levels always required for mines for these parameters unless RP exists and limits are set.
(4) Data also considers previous term data to make RP determination.

VIII. NARRATIVE WATER QUALITY STANDARDS

All narrative limitations in A.A.C. R18-11-108 that are applicable to the receiving water are included in Part I, Sections D and G of the draft permit.

IX. MONITORING AND REPORTING REQUIREMENTS (Part II of Permit)

Section 308 of the Clean Water Act and 40 CFR Part 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Additionally, monitoring may be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality.

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance.

Discrete (i.e., grab) samples are specified in the permit for all parameters. The quality of the discharge is not expected to be highly variable.

The requirements in the permit pertaining to Part II, Monitoring and Reporting, are included to ensure that the monitoring data submitted under this permit is accurate in accordance with 40 CFR 122.41(e). The permittee has the responsibility to determine that all data collected for purposes of this permit meet the requirements specified in this permit and is collected, analyzed, and properly reported to ADEQ.

The permit (Part II.A.2) requires the permittee to keep a Quality Assurance (QA) manual at the facility, describing sample collection and analysis processes; the required elements of the QA manual are outlined.

Reporting requirements for monitoring results are detailed in Part II, Sections A to C of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs), and AZPDES Flow Record forms. The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.

Electronic reporting

The US EPA has published a final regulation that requires electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination System (NPDES) program information instead of the current paper-based reporting (Federal Register, Vol. 80, No. 204, October 22, 2015). Beginning December 21, 2016 (one year after the effective date of the regulation), the Federal rule required permittees to make electronic submittals of any monitoring reports and forms called for in their permits. ADEQ has created an online portal called myDEQ that allows users to submit their discharge monitoring reports and other applicable reports required in the permit.

Requirements for retention of monitoring records are detailed in Part II.D of the permit.

XI. SPECIAL CONDITIONS (Part V in Permit)

Storm Water Exemption

The permittee discharges mine drainage subject to Part 440 Subpart L and qualifies for the *Storm exemption for facilities permitted to discharge* as provided in 40 CFR Part 440.131 (b), which allows a source with a discharge subject to 40 CFR Part 440 to have an overflow as a result of a storm event that does not meet the limitations established in 40 CFR Part 440 if that facility (1) is designed, constructed and maintained to contain the maximum volume of wastewater which would be generated by the 100-year, 24-hour storm event and (2) has taken all reasonable steps to maintain treatment and minimize overflow and (3) provides notification of such discharges.

The *Storm exemption for facilities not permitted to discharge* as provided in 40 CFR Part 440.131 (c) allows a source which is not permitted to discharge subject to 40 CFR Part 440 to have an overflow as a result of a storm event that does not meet limitations established in 40 CFR Part 440 if that facility (1) is designed, constructed, and maintained to contain the maximum volume of wastewater stored and contained by the facility during normal operating conditions without an increase in volume from precipitation and the maximum volume of wastewater that would be generated by a 100-year, 24-hour storm event and (2) has taken all reasonable steps to minimize overflow or excess discharge and (3) provides notification of such discharges.

The permittee will control all areas of mine drainage and areas of potential mine drainage at the mine site within containment designed to contain the 24-hour, 100-year storm event. Because discharges from the ASARCO Mission Complex Outfalls 003G and 004I are expected to qualify for the stormwater exemption, the technology-based limitations have not been included in the discharge limitations specified in Part I.A, Table 1.a. Additional monitoring and reporting of all parameters are required in Table 2.a and 2.b. Requirements for containment, maintenance, and sampling of runoff are detailed in Part IV of the permit and include requirements that the ASARCO Mission Complex establish and maintain Best Management Practices, review and update the Stormwater Pollution Prevention Plan (SWPPP), and submit the revised SWPPP for approval by the permitting authority.

Special Study

ASARCO Mission Complex has requested to remove internal monitoring point 005K and outfall 007H. ASARCO stated the source of the stormwater representative of the discharge does not come into contact with any tailings or mine workings from the ASARCO Mission Complex site. ASARCO states there are multiple inputs of stormwater in the wash coming from other drainage areas not associated with Mission Complex that are contributing to the pollutants that were detected in the monitoring data for Outfall 007.

In order to affirmatively conclude the source of pollutants are not attributed to the Mission Complex site ASARCO will conduct a special site study and submit it to ADEQ. ADEQ will review the results of the study and if ASARCO demonstrates the Mission Complex site is not contributing any pollutant loading to outfall 007H, ADEQ can remove the outfalls as requested.

Best Management Practice

The permittee must continue to maintain and update, when necessary, the existing best management practices (BMPs) plan as specified in the permit in Part III.A – E which covers activities in the drainage basins tributary to the permitted outfalls.

Permit Reopener

This permit may be modified based on newly available information; to add conditions or limits to address demonstrated effluent toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if assessment levels in this permit are exceeded [A.A.C. R18-9-B906 and 40 CFR Part 122.62 (a) and (b)].

XII. ANTIDEGRADATION

Antidegradation rules have been established under A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. The discharge from the ASARCO Mission Complex will be to an ephemeral wash which needs to meet tier 1 antidegradation requirements. Effluent quality limitations and monitoring requirements have been established under the proposed permit to ensure that the discharge will meet the applicable water quality standards. As long as the permittee maintains consistent compliance with these provisions, the designated uses of the receiving water will be presumed protected, and the facility will be deemed to meet currently applicable tier 1 antidegradation requirements under A.A.C. R18-11-107.

XIII. STANDARD CONDITIONS

Conditions applicable to all NPDES permits in accordance with 40 CFR, Part 122 are attached as an appendix to this permit.

XIV. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-A907)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft AZPDES permit or other significant action with respect to an AZPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908)

Rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C R18-9-A908(B))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

EPA Review (A.A.C. R18-9-A908(C)

A copy of this draft permit and any revisions made to this draft as a result of public comments received will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

XV. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division – Surface Water Permits Unit
Attn: Jessica Kohls
1110 West Washington Street
Phoenix, Arizona 85007

Or by contacting Jessica Kohls at (602) 771 – 0391 or by e-mail at kohls.jessica@azdeq.gov.

XVI. INFORMATION SOURCES

While developing effluent limitations, monitoring requirements, and special conditions for the draft permit, the following information sources were used:

1. AZPDES Permit Application Forms 1 and 2F, received December 26, 2018, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.

2. Supplemental information to the application received by ADEQ on February 22, 2019 and April 8, 2019.

3. ADEQ files on ASARCO Mission Complex Mine.

4. ADEQ Geographic Information System (GIS) Web site, EPA Enforcement and Compliance History Online database, and files uploaded via MyDEQ.

5. Information provided to ADEQ staff during a site visit to the future facility location on October 18, 2016.

6. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted December 31, 2016.

7. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.

8. Code of Federal Regulations (CFR) Title 40:
   Part 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.*
   Part 124, *Procedures for Decision Making*.
   Part 133. *Secondary Treatment Regulation.*
   Part 503. *Standards for the Use or Disposal of Sewage Sludge*.

9. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.

10. *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, US EPA, May 31, 1996.

11. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA /821-R-02-013).

12. U.S. EPA NPDES Permit Writers' Manual, September 2010.